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III. *A Letter from Mr. Henry Baker F.R.S.  
to the President, concerning the Grubbs  
destroying the Grass in Norfolk.*

S I R,

Read Nov. 5. 1747. **H**AVING seen some Letters lately sent from the Counties of *Norfolk* and *Suffolk*, giving an Account, that prodigious Numbers of what one Letter calls *Grubs*, and another large *Maggots*, full as thick and almost as long as a Man's little Finger, are dispersed over the Fields, and do abundance of Mischief in those Counties, I immediately imagined (tho' the Accounts were very imperfect, being sent by People wholly ignorant of Natural History), that they must be the *Aureliæ* or *Chrysalides* of some Species of Beetle: And desiring to get what farther Information I could concerning them, I wrote with that Intent to my ingenious Friend Mr. *Arderon* at *Norwich*, F. R. S. whose Answer (with some Additions of my own) I shall

‘ Also on our antient Monuments of Stone or Alabaster cumbent Statues have mostly piked Shoes. But some of earlier Date than *Ed. III.* have broad turn-up Shoes at the Toes, of the same like Form and Make as this Womans. The Mens broad Toes, and the Womens narrow.

‘ Therefore I conclude this very Sandal could not well be earlier than *Ed. I.* or *Hen. III.*; also, that the cutting the Form, and sewing to form the Heel cleverly, by a stitching behind the Heel with a small Leather Thong, may have been in Use before that of waxed Thread used by Shoe-makers, formerly called Cord-wainers.’

*Fig. 1.* shews the Shoe side-ways, laced, as when upon the Foot.

*Fig. 2.* the same seen from above.

*Fig. 3.* the same unlaced, and laid flat, to shew the manner of its being cut out of the raw Hide.

shall beg Leave to lay before you, after first intreating your Patience to read a Description of these Insects, published in the *London Evening Post* of *October* the 29th, as it is the same in Substance with the private Letters that put me on enquiring after them.

*Extract of a Letter from Norfolk, to a Friend in London.*

‘ I Forgot to tell you in my last of the Grubs that  
 ‘ are in many Parts of our Country. They attack  
 ‘ the Corn-Fields sometimes, and spoil all the Crops,  
 ‘ but haunt chiefly the richest Meadows, where they  
 ‘ work between the Turf and the Soil, eating the  
 ‘ Roots of the Grass to that degree, that the Turf  
 ‘ rises and rolls up, with almost as much Ease as if  
 ‘ it was cut with a Turfing-Spade; and underneath  
 ‘ the Soil is turn’d to a soft Mould, like a Bed in a  
 ‘ Garden, for about an Inch deep; in which lie the  
 ‘ Grubs, in a curved Posture, upon their Backs, all  
 ‘ and every one of them with only the Tips of their  
 ‘ two Ends in Sight, the rest of their Bodies buried  
 ‘ in the Mould. They are in general about an Inch  
 ‘ and an half long, and as big as the Stem of a Tobacco-Pipe, near the Bowl; they have red Heads,  
 ‘ white shining Bodies, a little hairy on the Back,  
 ‘ and the Rump End is ready to burst with a dirty  
 ‘ looking Stuff, easily seen through the transparent  
 ‘ Skin; they have six hairy Legs, three on each Side,  
 ‘ all near the Head, two *Forceps*, or Jaws, like a  
 ‘ Hornet, with which they cut asunder the Roots  
 ‘ of the Grass, and destroy whole Meadows, with-  
 F f f f 2 ‘ out

‘ out any Remedy yet found out to destroy them ;  
 ‘ they have no Eyes, as can be seen. Whether they  
 ‘ are in their ultimate State, or are to be Flies, I  
 ‘ know not, for we could find no *Aurelia*. The  
 ‘ first News we heard of them was about two Years  
 ‘ ago, by a Gentleman who lives near *Norwich*,  
 ‘ and then were supposed to be new Comers. This  
 ‘ Summer they have been much in *High Suffolk*,  
 ‘ to the Farmers and Graziers great Loss; and we  
 ‘ now hear they are likewise in some Part of *Essex*;  
 ‘ they are often discover’d by Hogs, who, as I am  
 ‘ inform’d, are greedy of them at first, but having  
 ‘ once had their Bellies full, never care for them  
 ‘ after.’

Of these Grubs Mr. *Arderon* gives the following Information. — They are, says he, a Species of Insects but too common about *Norwich*, and, to my own Knowledge, have been more or less numerous in this County for these twenty Years past. They are the *Erucæ* of the *Scarabæus arboreus vulgaris major* of Mr. *Ray*, that is the Tree-Beetle, or blind Beetle, vulgarly in *Norfolk* called the *Dor*.

In different Parts of *England* they are called the Brown Tree Beetle, the Blind Beetle, the Chafer, the Cock-Chafer, the Jack-Horner, the Jeffry-Cock, the May-Bug, and the *Dor*. By the *Dutch* they are named *Baum-kaefer*, *Roub-kaefer*, *Koren Worm*, or Corn-Worm, because they destroy the Roots of Corn; and in *Zealand*, *Molenaers* or *Millers*, as *Goedartius* says, *Chap.* 78. because they bite the Leaves of several Sorts of Trees into Particles as small as if they were ground. In *England* I have likewise heard them  
 called

called *Millers*; but supposed it to be from a white mealy Powder wherewith their Wings are covered. The *French* call them *Hanetons*.

This Insect has two Pair of Wings, one filmy, and the other scaly: The first Pair fold together under the latter, and remain quite hid, unless when spread out for Flight. The *Elytra* or case Wings are of a reddish light-brown Colour, and seem sprinkled with a white Powder that may easily be wiped off; the Legs and pointed Tail are whitish, the rest of the Body brown, except at each Joint on the Sides of the Belly, where there is an indented Line of white. The Circles round the Eyes are yellowish, and so are the *Antennæ*, which are short, and terminated by lamellated spreading Tufts, capable of being opened more or less.

It is probable the Females make Holes in the Ground with their sharp Tails, and there deposit their Young: But whether at first they are small *Eruca*, or Eggs from whence such *Eruca* are hatched, I don't pretend to say: 'Tis certain however, that these *Eruca* are extremely mischievous, by devouring the Roots of almost every thing where they come, and in some Grounds they are to be found in such Numbers as is scarcely credible.

I have seen, says Mr. *Arderon*, whole Closes of fine flourishing Grass, in Summer-time, become wither'd, dry, and as brittle as Hay in a few Weeks, by this Vermin's eating off the Roots; in doing which they are so dextrous, that many Yards of this wither'd Grass might be rolled up in one Piece, all the Fibres that fasten'd it to the Ground being gnaw'd away.

Closes

Cloves of Turnips often undergo the same Fate from these devouring Insects, which one would think designing to do as much Mischief as possible (could we suppose them capable of any Design); for when one of them fixes upon a Turnip, he eats only the middle small Root, which soon causes it to wither and die, and then moves on to the next. In like manner they destroy the Roots of Wheat, Rye, &c. and almost every other useful Vegetable that happens in their Way. And what makes this Pest the more deplorable, is the long Time of their Continuance in their *Eruca*, or most mischievous State, which, according to *Goedartius*, is four Years at least: But *Mouffet* writes, that in *Normandy* they are observed to be most numerous every third Year, which is therefore called *L'An des Hannetons*. And it is not improbable, that in the open Fields where they are well fed, they may come to their perfect State a Year sooner than those did which *Goedartius* almost starved in glass Jars.

Mr. *Arderon* says, he has frequently been told by People of Credit and Observation, that neither the severest Frosts of our Climate, nor the being immersed in Water, will destroy these *Eruca*; some having been exposed for many Days to the keenest Frosts, and others cover'd with Water for as long a Time, which notwithstanding were found to revive, and become as vigorous as ever.

Crows and Hogs devour these *Eruca* greedily; but their Numbers are too great to be much diminished thereby. The most effectual Way, tho' very laborious, is to beat them off the Trees in the Day-time with long Poles, and then sweep them together

ther and burn them. On a Farm at *Heathal*, near 5 Miles S. W. from *Norwich*, of 80 *l. per Annum*, belonging to St. *Helen's* Hospital in this City, in the Occupation of Mr. *James Ebdin*, these Insects were so numerous last Year, that the Farmer and his Servants affirmed they gather'd eighty Bushels of them, the *Erucae* of which had so spoiled the Produce of his Farm, that the Court of this City, in Compassion of the poor Man's Misfortune, allowed him 25 *l.* The Order for which I send you a Copy of, dated *Dec. 5. 1746.*

In the Day-time few of the Beetles fly about, but conceal themselves under the Leaves of Oaks, Sycamores, Limes, &c. where they seem asleep till near Sun-set, when they take Wing and fly about the Hedges, as thick as Swarms of Bees; at which time they frequently dash themselves against People's Faces with great Violence, and by their so doing occasioned the common Proverb, *As blind as a Beetle.*

*Mouffet* tells us, it is recorded, that on the 24th of *February*, in the Year 1574. there fell such a Multitude of these Insects into the River *Severn*, that they stopp'd and clogg'd the Wheels of the Water-Mills: As to which I must take notice, that their coming so early in the Year was no less extraordinary than their Multitudes; for the larger Species seldom appear till the Month of *May*; and a smaller Sort, which come out in *July* and *August*, are seldom seen after the Evenings grow cold.

We are told in the *Transactions* of the *Dublin* Society, that the Country People in one Part of that Kingdom suffer'd so greatly by the Devastation made  
by

by these Insects, that they set Fire to a Wood some Miles in Length, which parted two adjacent Counties, to prevent their dispersing themselves any farther that Way.

This, Sir, is all I shall trouble you with at present concerning the Grubs mentioned in the News-Paper, as well as in private Letters, without distinguishing of what Kind they are; and if this Information may prove acceptable, it will be a singular Pleasure to him who begs the Honour to be esteemed,

*Strand*, Nov. 5.

S I R,

1747.

*Your most obedient,  
and most humble Servant,*

H. Baker.

Mr. *Arderon*, in a subsequent Letter to Mr. *Baker*, writes, that Mr. *Ebdin* solemnly declared, before the Committee of St. *Helen's* Hospital, that the Damage done to him that Year amounted to 100*l.* and upwards. Three Gentlemen, appointed to inspect into the Truth of his Complaint, visited the Farm in the Harvest-Time, when, amongst other things, they found those Ears of Wheat, which had Part of their Roots eaten off, to look pale and wan, and when rubb'd, to afford nothing but small wither'd Corn, not fit for any Use, and the Straw came up with the least Touch; and that these *Eruca's* do most Damage where the Soil is richest.

Tho' many burn these Flies, when they have beat them off the Trees, Mr. *Ebdin's* Method was to spread Cloths under the Trees, where he saw them hanging thickest, and when beaten off, to wrap them up in the Cloths, and beat them to Pieces with wooden Beetles.

Mr. *Arderon* says, he had the above Remarks from Mr. *Richard Humfrey* one of the Committee who inspected the Farm; and he adds that some ingenious Persons account for the large Increase of these Insects from the Decrease of Rooks in this County, which they say greedily devour them in their Grub-State; and the Decrease of Rooks is owing to most of the ancient Rookeries having been destroyed by the large Fall of Timber-Trees made of late Years, which has obliged the Rooks to remove into other Parts of the Kingdom.

Nov. 21. Mr. *Arderon* dug up with his Cane two of these *Eruca's* within a Foot of one another in the *Upper Close*, near the middle of the City of *Norwich*, surrounded with Houles; they were about half-grown, an Inch and half long, and two Tenths in Diameter.